

Applicant : Andreas Muth et al.
For : DEVICE AND METHOD FOR PRODUCING INSULATION ELEMENTS
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In the Claims:

This listing of claims will replace all prior versions and listings of claims in the application:

1-19. (canceled)

20. (new) A device for producing insulation elements made of mineral wool containing a curable binder from insulation material having a rectangular cross section, comprising:

a conveyor configured to having the insulation material deposited thereon prior to curing; and

a curing oven configured to have the insulation material transported thereto via the conveyor, the curing oven having a molding device therein;

the molding device reducing a cross section of a gap through which the insulation material is transported within the curing oven and compacting the insulation material as it passes therethrough; and

the molding device being configured to provide at least one permanent impression and/or at least one deformation in the insulation material.

21. (new) The device of claim 20, wherein:

the curing oven comprises a tunnel furnace.

22. (new) The device of claim 20, wherein:

the molding device is integrated in a conveyor unit within the curing oven, the conveyor unit comprising at least one first molding element to form the at least one permanent impression and/or at least one deformation, during which process, as a result of contact with a molding surface of the at least one first molding element, the insulation material to be molded assumes a cross-sectional profile that deviates from the rectangular cross section of the insulation material entering the molding device.

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23. (new) The device of claim 22, wherein:
the at least one first molding element is configured to contact the insulation material with a pressure contact.
24. (new) The device of claim 22, wherein:
the molding device has at least one second molding element opposite the at least one first molding element.
25. (new) The device of claim 22 wherein:
the at least one molding element comprises at least two molding elements.
26. (new) The device of claim 22, wherein:
the molding device further includes at least one lateral molding element.
27. (new) The device of claim 22, wherein:
the first molding element is formed by a compacting and guiding unit, which, together with the conveyor unit, compacts the insulation material or transports it at an upper side.
28. (new) The device of claim 27, wherein:
the compacting and guiding unit comprises a flight belt.
29. (new) The device of claim 24, wherein:
the first molding element and/or the second molding element are engineered as attachable elements for the conveyor unit or a compacting and guiding unit, which, together with the conveyor unit, compacts the insulation material or transports it at an upper side.
30. (new) The device of claim 29, wherein:
the attachable elements and the conveyor unit are engineered as metal components that have the form of gratings or are provided with ventilation channels.

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31. (new) The device of claim 30, wherein:
the components are made of heat-resistant materials.
32. (new) The device of claim 30, wherein:
the components are segmented.
33. (new) The device of claim 29, wherein:
the attachable elements for attachment to the conveyor and/or compacting and guiding unit have quick-release closures.
34. (new) The device of claim 24, wherein:
the first and/or second molding element is arranged such that with respect to a conveying plane of the conveyor unit, its molding surface is inclined about a longitudinal transport axis.
35. (new) The device of claim 20, wherein:
the molding element of the molding device is engineered as an endless loop.
36. (new) The device of claim 35, wherein:
the endless loop includes a plurality of successive segments.
37. (new) The device of claim 20, wherein:
the molding element is engineered such that a differing degree of compaction is obtained over a breadth of the molding surface.
38. (new) The device of claim 20, wherein:
the molding element has a contoured molding surface.

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39. (new) The device of claim 38, wherein:
the contoured molding surface comprises an inclined planar surface.
40. (new) The device of claim 38, wherein:
the contoured molding surface comprises grooves and/or projections.
41. (new) A method of producing insulation elements made of mineral wool containing curable binder, comprising:
depositing insulation material on a conveyor;
curing and transporting the insulation material through a curing oven;
subjecting sections of the insulation material to controlled compaction in such a manner that at least one permanent impression and/or deformation is produced in the insulation blanket while the insulation material is curing during its passage through the curing oven.
42. (new) The method of claim 41, wherein:
the curing oven comprises a tunnel furnace.
43. (new) The method of claim 41, wherein:
the mineral wool is rock wool.
44. (new) The method of claim 41, wherein:
the mineral wool is glass wool.
45. (new) The method of claim 41, further including:
providing the insulation material with a non-rectangular cross-sectional profile before or during curing.
46. (new) The method of claim 45, wherein:
the cross-sectional profile comprises at least one depression or projection.

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47. (new) The method of claim 46, wherein:
the cross-sectional profile of the insulation element displays two parallel recesses in one surface.
48. (new) The method of claim 41, wherein:
during the step of subjecting sections of the insulation material to controlled compaction, the insulation material is compacted to varying degrees, whereby a density within the insulation elements varies accordingly.
49. (new) An insulation element comprising:
mineral wool having a non-rectangular cross-sectional profile and having areas of different density.
50. (new) The insulation element of claim 49, wherein:
the mineral wool varies in height over the cross-sectional profile.
51. (new) The insulation element of claim 49, wherein:
the insulation element has a higher density in thinner areas than in thicker areas.
52. (new) The insulation element of claim 49, wherein:
the cross-sectional profile of the insulation element displays, in one surface, two parallel recesses in an area of which the density is higher than in very thick areas.